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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/698,726

10/30/2003

Alexandros T. Demos

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1583

7590

06/30/2004

PATENT COUNSEL, MS/2061  
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EXAMINER

SMITH, JOHNNIE L

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/698,726

Applicant(s)

DEMOS ET AL. 

Examiner

Johnnie L Smith II

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1030</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings were received on 03/24/2004. These drawings are accepted.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 6,407,399 (Livesay) in view of US patent 5,302,238 (Roe et al). In

reference to claims 1 and 8, Livesay teaches an apparatuses and method of use comprising an electron beam apparatus, having a chamber (20), a large-area cathode (22) disposed in the chamber (20), a first power supply (29) connected to the cathode (22), an anode (26) having holes therein positioned inside the chamber, and a second power supply (31) configured to apply a voltage to the anode; a gas inlet and a exit pump (abstract, figures. 1-3,6,7A, column 1 lines 30-40, column 2 lines 20-40, column 3, column. 4 lines 65-68, column 5, col. 6 lines 45-55, column 10 lines 35-42, and column 11 lines 1-20, 35-40. However, Livesay fails to show that the working distance is greater than an electron mean free path. Roe teaches such a limitation (column 5 lines 42-55). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Livesay and Roe for the purpose of operating at a distance greater than the mean free path, since Roe teaches the means of increasing the mean free path.

5. In reference to claims 2-7 and 9-11, Livesay teaches the source of gas, being of one or more of Ne, He, Ar, H<sub>2</sub>, O<sub>2</sub>, Kr, Xe, and N<sub>2</sub> (column 10 lines 3-8); wherein a material of the surface of the cathode and anode are selected from the group consisting of Al, Ti, Ni, Si, Mo, graphite, W, Co, and alloys of the foregoing (column 6 lines 46-53); wherein the source of negative voltage is capable of providing output voltages in range from about -.5 KV to about -10 KV (column 5

lines 60-64); and wherein the gas pressure is greater than about 40 mTorr (column 5 lines 26-35).

### *Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US patents; 6,037,717 (Maishev et al), 6,214,183 (Maishev et al), 4,581,118 (Class et al), 4,590,596 (Wortman et al) and US patent publications 2004/0089535 (Wolfe et al) and 2004/0099817 (Demos et al). All of the cited US references contain art similar to that being claimed by applicant, more specifically, methods and apparatuses for electron beam generation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johnnie L Smith II whose telephone number is 571-272-2481. The examiner can normally be reached on Monday-Thursday 7-4 P.M. and Alternate Fridays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on 571-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JSII

Johnnie L Smith II  
Examiner  
Art Unit 2881



JOHN R. LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800